SONY

3-750-118-21 (1)

Stereo Cassette Deck

Operating Instructions

TC-RX55ES

© 1989 by Sony Corporation

Owner's Record

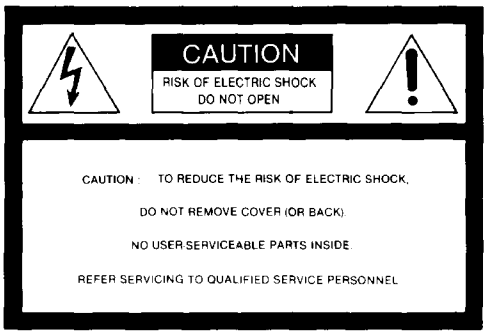
The model and serial numbers are located at the rear. Record the serial number in the space provided below. *Refer to these numbers whenever you call upon your* Sony dealer regarding this product.

Model No. TC-RX55ES

Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

*The graphical symbols are on the rear enclosure.

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate the equipment with respect to the receiver
Move the equipment away from the receiver
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

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Features

The TC-RX55ES is an auto-reverse cassette deck equipped with a laseramorphous magnetic alloy head and LC-OFC winding for recording and playback. It comes with the following features.

- **The Dolby HX PRO* system** to improve the linearity of the tape's high-range response during recording.
- **Easy-to-read digital counter** which shows the elapsed recording/playback time.
- **Cue & review and memory play functions** to provide easy access to a desired position.
- **B and C type Dolby NR* systems** to reduce tape hiss noise.
- **Timer-activated play and recording** with an optional timer.
- **An optional remote control unit** to enable various operations to be remotely controlled.

* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol ◻◻ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Precautions

On safety

- Operate the unit on 120 V AC, 60 Hz only.
- Should anything fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it will not be used for a long time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.

On operation

- When the unit is not being used, turn the power off to conserve energy and to extend the useful life of your unit.
- Because of a safety mechanism, the function buttons will not operate if the cassette holder is not completely closed, if there is no cassette, or if a cassette has been incorrectly inserted into the cassette holder.

On head cleaning

The heads and tape path should be cleaned after every 10 hours of operation. Dirty heads and a dirty tape path may cause:

Loss of high-frequency response
Loss of sound volume
Sound drop-out

If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

Note on cassettes longer than 90 minutes

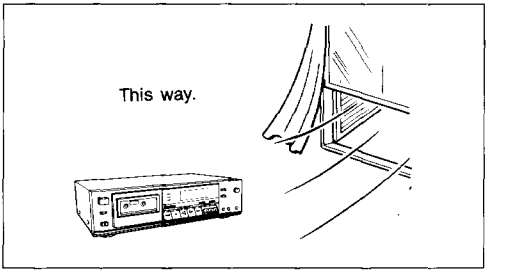
The use of cassettes longer than 90 minutes is not recommended except for long continuous playback.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

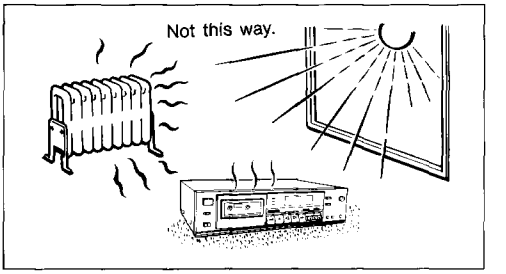
Installation

Notes on Installation

Place the unit in a location with adequate air circulation to prevent internal heat build-up in the unit.



Do not place the unit on a soft surface, such as a rug, that would block the ventilation holes on the bottom.



Install the unit with the front panel facing toward you.

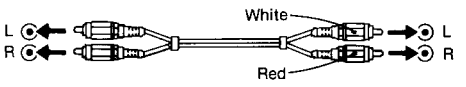
Do not install the unit:
—near heat sources such as radiators or air ducts.
—in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
—in an inclined position.

Do not throw away the carton and the packing material!
They will come in handy when transporting the unit or shipping it for servicing.

Connections

Notes on Connections

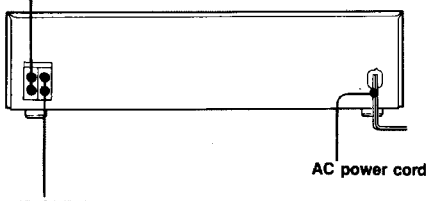
- Turn off the power to all equipment before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel (R) connection and the white plug for left-channel (L) connection.



- The connecting cords should be fully inserted into the jacks. A loose, connection may cause hum pick-up.

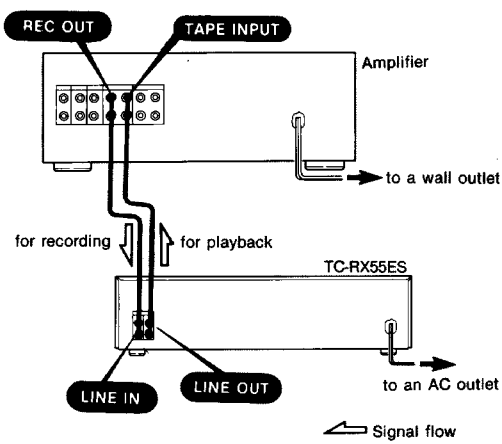
Identification of Rear Panel Parts

LINE IN (line input) jacks (phono jacks)
Connect to the tape outputs (recording outputs) of an amplifier for tape recording.

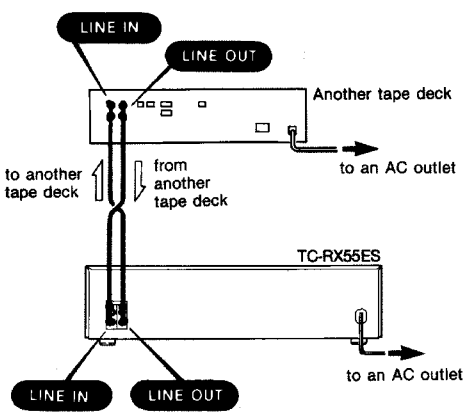


LINE OUT (line output) jacks (phono jacks)
Connect to the tape inputs of an amplifier for playback.

Basic Connection

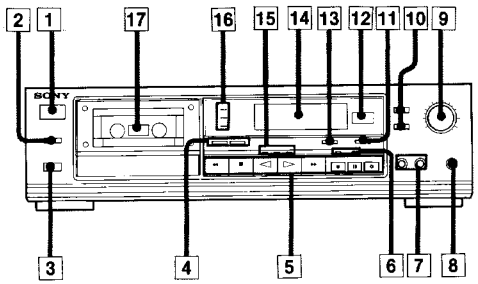


Connection for tape dubbing



Identification of Front Panel Parts

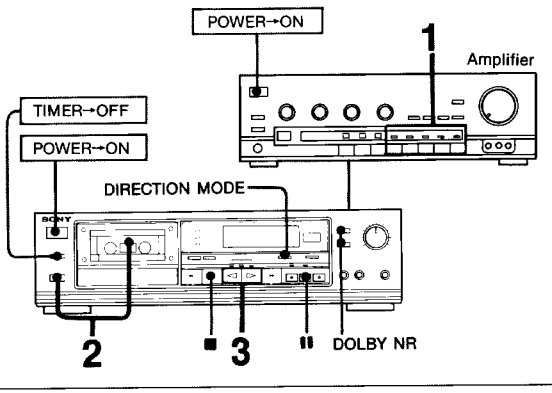
Refer to the pages indicated in ● for details.

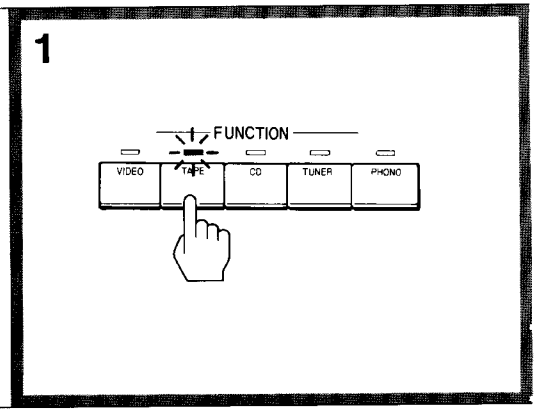


1 **POWER switch**
2 **TIMER switch** ⓮
3 **⏏ (eject) button**
4 **COUNTER RESET and MEMORY buttons** ⓾
5 **Tape operation buttons**
- ◀◀ (leftward fast winding) button
- ▶▶ (rightward fast winding) button
- ▶ (forward play) button
- ◀ (reverse play) button
- ■ (stop) button
- ❚❚ (pause) button
- ○ REC MUTE (record muting) button ⓫
- ● REC (record) button

6 **Indicators (REC, PAUSE)**

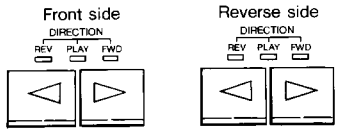
Playback





How to select DIRECTION MODE
To play back one side, select →.
To play back both sides continuously*, select ⇄.
*After playing back five times, the deck automatically stops.

Side of the cassette being played back
A DIRECTION indicator illuminates to indicate the side of the cassette being played back.

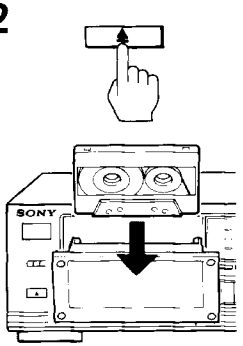


How to use the DOLBY NR switches
Set the DOLBY NR switches to the same positions used when the cassette was recorded.

Dolby NR system	Switch setting	
	Upper switch	Lower switch
Dolby B	⎍ ON	⎍ B-TYPE
Dolby C	⎍ ON	⎍ C-TYPE
Dolby OFF	⎍ OFF	Either position

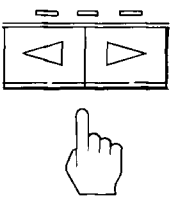
7 **MICROPHONE jacks (phone jacks)**
8 **HEADPHONES jack (stereo phone jack)**
9 **REC LEVEL (recording level) controls** ⓭
10 **DOLBY NR switches** ❺, ⓬
11 **MPX FILTER switch** ⓬
12 **Remote control sensor**
You can control this cassette deck remotely with:
— Any remote commander (supplied with a Sony amplifier or receiver) which is marked with the R logo and has cassette deck control capability.
— An optional Sony remote commander with the R logo.
13 **DIRECTION MODE selector** ❺, ⓬
14 **PEAK LEVEL METER and DIGITAL COUNTER**
15 **DIRECTION Indicators**
16 **AUTO TAPE SELECT indicators**
17 **Cassette holder**

2



3

From the front side: ▶
From the reverse side: ◀

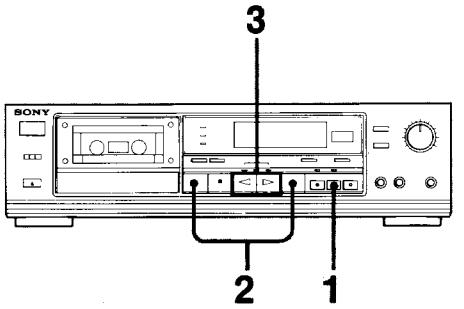


To stop playback, *press* ■.
To stop for a moment during play, press ❚❚.
To restart play, press ❚❚ again.

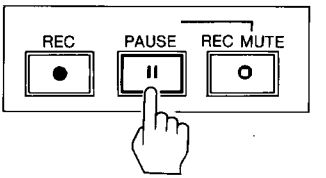
What is the Dolby NR system?
The Dolby NR (noise reduction) system reduces tape hiss noise in low-level, high-frequency signals by boosting these signals during recording and then lowering them during playback.

The TIMER switch must be set to OFF because:
The TIMER switch prepares the system for timer-activated recording and playback using an optional timer. If it is not set to OFF, recording or playback will start automatically when the power is turned on.

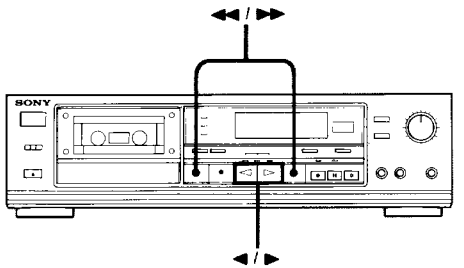
Locating a Desired Position—Cue & Review Functions



1



Starting Playback Automatically after Fast Winding—Auto Play

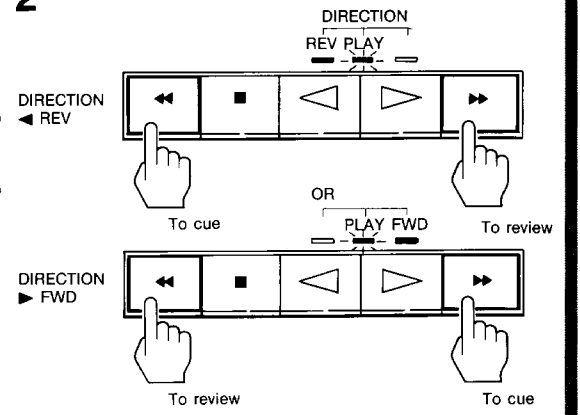


You can automatically start playback from the beginning following fast winding.

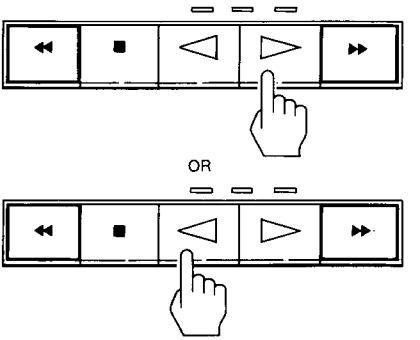
From the beginning of the front side, press ▶ while keeping ◀◀ pressed.
From the beginning of the reverse side, press ◀ while keeping ▶▶ pressed.

Be sure to turn off the MEMORY indicator before starting auto play
If the MEMORY indicator is displayed, press the MEMORY button to turn off the indicator. Otherwise, the tape will be rewound to around 0000 and playback will start.

2



3 A chattering sound will be heard.

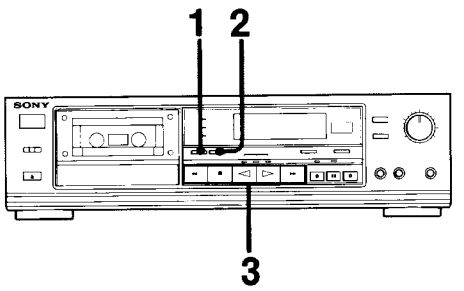


At the desired point, press ▶ or ◀.
Playback will start again.

Is it necessary to set the tape type being used?
No. Because the deck has an automatic tape type detection system. Of the four major types of tapes, your unit can use TYPE I (normal), TYPE II (CrO_2) and IV (metal). The tape detection system automatically adjusts the equalization and bias current to the optimum level for the type of cassette detected. The tape type is indicated by the TAPE TYPE indicator.
The characteristics of cassettes may differ slightly depending on the make or grade. The following table shows the classification of Sony cassette tape:

Tape type	Tapes (C30–C90)
TYPE I (Normal)	SONY: EF, HF, HF-S, HF-ES Other TYPE I equivalent tapes (For 120 μs EQ, NORMAL BIAS)
TYPE II (CrO_2)	SONY: UX, UX-S, UX-ES, UX-PRO Other TYPE II equivalent tapes (For 70 μs EQ, HIGH BIAS)
TYPE IV (Metal)	SONY: METAL-ES Other TYPE IV equivalent tapes (For 70 μs EQ, METAL BIAS)

Locating a Desired Position Using the Counter—Memory Play



1 **At the desired point.**

RESET

DIGITAL COUNTER
0000

2

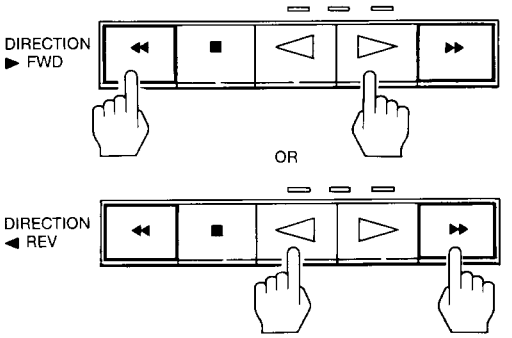
MEMORY

DIGITAL COUNTER
0000
MEMORY

Do not turn the power off while using the counter
When you turn the power off and on again, the counter is reset to 0000.

When you press only the ◀◀ or ▶▶ button when the MEMORY indicator is on
The tape will be rewound and the unit will stop at around 0000 (Memory stop).

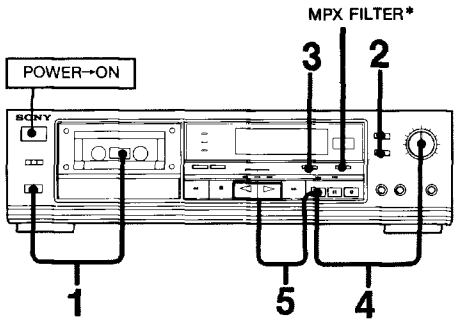
3 To return to the desired point during playback, Press ▷ (◁) while pressing ◀◀ (▶▶).

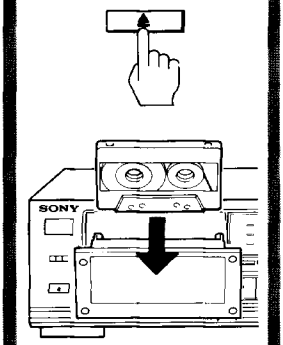


The tape will be rewound to around 0000 and playback will start.

The numbers of the counter do not move at constant speed
They move faster as the amount of tape on either reel decreases.

The counter may become inaccurate
—due to slack in the tape.
—due to frequent fast winding.





How to use the DOLBY NR switches (Step 2)
See page 6.

How to select DIRECTION MODE (Step 3)
To record on one side, select ⇄. (⊓)
To record on one side and then the other, select ⟲. (⏛)
Even at the ⟲ position, recording automatically stops when the tape reaches the end of the reverse side.

To start recording (Step 5)
To start recording from the front side, press ▶ while keeping ● pressed.
To start recording from the reverse side, press ◀ while keeping ● pressed.

When recording with the microphone
Adjust the recording level as you would when recording from other sources. Note that no other source can be recorded when the microphone is connected, so be sure it is unplugged when recording from a different source.

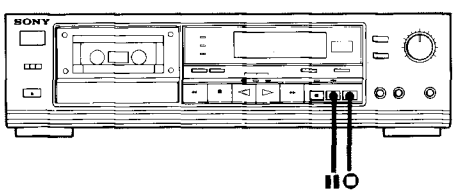
Recording is possible only on the side(s) shown by the blinking indicator(s)
If the cassette tab has been removed for the prevention of accidental erasure, the indicator will not blink when ● is pressed, but instead, the deck will start playback.

How to start recording more precisely
1 Press ❚❚.
2 Press ▶ or ◀, keeping ● pressed.
3 Adjust the recording level.
4 Press ❚❚ again at the desired point.

Using the MPX filter to record FM broadcasts*
When recording FM broadcasts with the Dolby NR system, set the MPX FILTER switch to ON. This turns on the MPX filter which eliminates remnants of the 19k Hz stereo carrier and 38k Hz subcarrier signals which may impair the operation of the Dolby NR system. Be sure that the Dolby NR switch is turned on since the MPX filter will not function otherwise. Note that the MPX FILTER switch must be turned on only when the tuner is not equipped with its own MPX filter or the equipped filter still results in sound degradation during recording with the Dolby NR system.

Inserting a Blank Space During Recording—Record Muting

Using the O button during recording, you can insert a blank space in a tape. This function enables you to eliminate unwanted input by replacing it with a blank space.



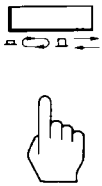
1 While recording, press O.
If you want the blank to be four seconds long, press and release the button immediately.
The ❚❚ indicator flickers and no incoming signals will be recorded on the tape.
After four seconds, the tape will stop automatically and the indicator will light up.
If you want the blank to be longer, keep pressing for as long as you want. After four seconds, the ❚❚ indicator will flicker more rapidly.
When you release O, the unit will change to the pause mode.

2 Press ❚❚ to resume recording.

3

Select the side(s) to be recorded.

DIRECTION MODE



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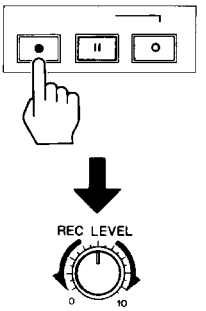
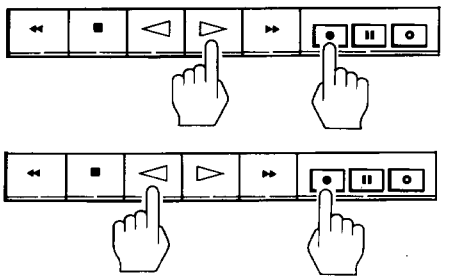


See "Recording Level Adjustment" below.

5

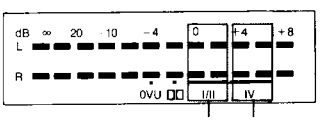


To stop recording, press ■.

Recording Level Adjustment

Adjust the recording level according to the tape type by observing the PEAK LEVEL METER and referring to the following diagram.

Recommended maximum PEAK LEVEL METER reading



TYPE I (normal), TYPE II (CrO_2) tapes

TYPE IV (metal) tapes

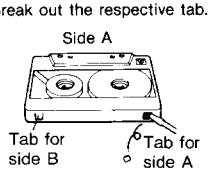
Tips on recording level adjustment

- Adjust the recording level as high as possible without causing distortion in the recorded sound.
  If the recording level setting is too high, the recording will be distorted; if it is too low, the tape will produce a hissing sound.
- If the program source to be recorded has many high frequency signals, set the level to a relatively low position.

Notes on cassettes

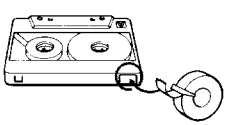
To protect a recording on side A or B

Break out the respective tab.



To reuse a cassette for recording

Cover the respective slot with plastic tape.



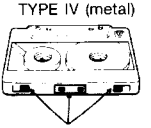
When using TYPE II (CrO_2) or TYPE IV (metal) cassettes

Be careful not to cover the detector slots which are necessary for automatic tape type detection.

TYPE II (CrO_2)

Detector slots

TYPE IV (metal)



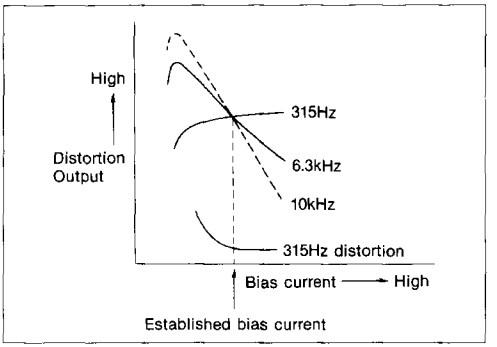
Detector slots

Cassette care

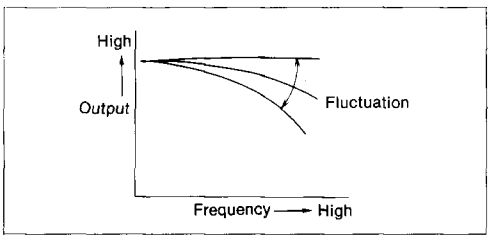
- Avoid touching the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with magnets, such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.

What is the DOLBY HX PRO System?

The DOLBY HX PRO System provides improved linearity in high-range frequency response during recording. Tapes recorded with this system retain the same high quality even when played back on other tape decks.



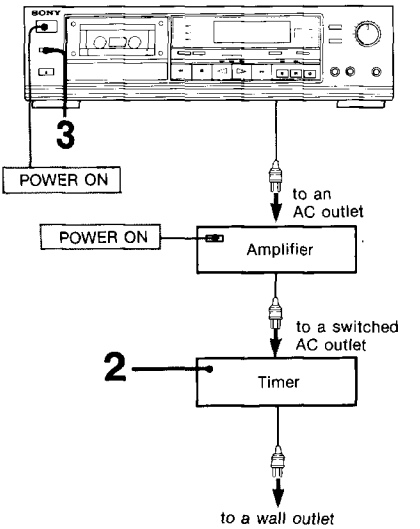
As shown above, characteristics such as output level and distortion differ widely according to the bias (high-frequency) current. In conventional systems, the bias current is susceptible to variations in certain recording signals (see diagram below) which may cause fluctuations in frequency response, distortion, or other unwanted characteristics.



With the DOLBY HX PRO System, the effective bias is controlled in millisecond units to greatly reduce distortion, improving linearity in high-range response and ensuring high-intensity recording with minimal distortion and noise.

Timer-Activated Recording and Playback

By connecting a commercially available timer, automatic recording or playback can be performed at a preset time.



1 Prepare the equipment for playback or recording.
(Shown on page 6 or 12.)

2 Set the timer to the desired time.
The power of the deck will be cut off.

3 Set the unit's TIMER switch to PLAY or REC.
Playback or recording will start at the preset time.

When the timer-activated operation is completed
Set the TIMER switch on the unit to OFF. If the TIMER switch is left at REC, the unit will automatically enter the recording mode the next time the power is turned on, and recorded material may be erased.

Keep the power switch depressed on the tape deck
When the timer is set, the power of the deck will be cut off. However, the POWER switch must be depressed to start the timer-activated operation.

Check the side of the cassette to be played back or recorded before setting the timer
The timer-activated operation starts from the side of the cassette used when the power was turned off.

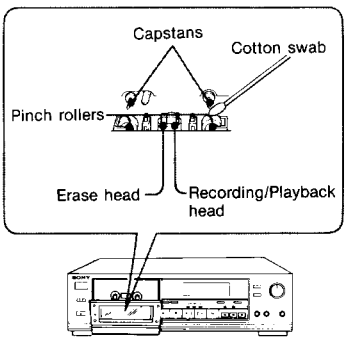
Maintenance

Cleaning the Heads and Tape Path

Clean all surfaces over which the tape travels after every 10 hours of operation. To obtain high-quality recording sound, however, cleaning before every recording is recommended.

1 Press ⏏ to open the cassette holder.

2 Wipe the heads, the pinch rollers and the capstans with a cotton swab slightly moistened with cleaning fluid or rubbing alcohol.



After cleaning the heads and tape path, do not insert a cassette until the areas cleaned are completely dry.

Demagnetizing the Heads

The heads will become gradually magnetized over an extended period of use, causing hiss and loss of high frequencies. To avoid this, demagnetize the heads and all metal parts in the tape path using a commercially available head demagnetizer.
Make sure that the unit is turned off during the demagnetizing operation.

Cleaning the Cabinet

Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvents such as alcohol or benzine.

Specifications

Recording system
4-track 2-channel stereo
Fast winding Approx. 90 sec. (with C-60 cassette)
Bias AC Bias
Signal-to-noise ratio (NAB, at peak level)

Cassette \ DOLBY NR switch	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UX-S)	57 dB	64 dB	70 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion
1.0 % (with Sony METAL-ES cassettes)
Frequency response
DOLBY NR OFF
• With TYPE IV cassette (Sony METAL-ES)
20–20,000 Hz (±3 dB)
30–18,000 Hz (±3 dB, 0VU recording)
• With TYPE II cassette (Sony UX-S)
30–17,000 Hz (±3 dB)
• With TYPE I cassette (Sony HF-S)
30–15,000 Hz (±3 dB)
Wow and flutter 0.09% WRMS (NAB)
Inputs Microphone inputs (phone jacks)
Sensitivity 0.25 mV (–70dB)
For a low-impedance microphone
Line inputs (phono jacks)
Sensitivity 77.5 mV (–20 dB)
Input impedance 50k ohms
Outputs Line outputs (phono jacks)
Output level of 0.44 V (–5 dB) at a load impedance of 47k ohms
Load impedance of over 10k ohms
Headphones output (stereo phone jack)
Output level of –28 dB at a load impedance of 8 ohms

General
Power requirements
120 V AC, 60 Hz
Power consumption
19 W
Dimensions Approx. 430 × 118 × 295 mm (w/h/d)
(17 × 4 3/4 × 11 5/8 inches)
including projecting parts and controls
Weight Approx. 4.0 kg (8 lbs 14 oz)
Supplied accessory
Connecting cord (2)

Design and specifications are subject to change without notice.

Troubleshooting Guide

The following trouble checks will help you correct the most common problems encountered with your tape deck. Should any problems persist after you have made these checks, consult your nearest Sony dealer.
Before proceeding with these trouble checks, first confirm the following basic points:

- The power cord is firmly connected.
- The amplifier connections are firmly made.
- The heads, capstans and pinch rollers are clean.
- The amplifier controls and switches are set correctly.

Function buttons and tape transport problems

Symptom	Cause	Remedy
Tape operation buttons do not activate.	Cassette holder is not fully closed.	Close the holder completely.
● button does not activate.	No cassette in the holder.	Insert a cassette.
	Tab has been removed from the cassette.	Cover the hole with plastic tape. (page 13)
Automatic shut-off mechanism activates before the tape comes to its end.	Tape is slack.	Take up the tape slack.
	Cassette shell is deformed.	Use another cassette.
	The inside of the cassette holder is illuminated by strong light.	Remove the light source.
Excessively loud tape transport noise during fast winding	This depends on the cassette used and is not a problem.	—

Recording and playback problems

Symptom	Cause	Remedy
Auto reverse function does not operate.	DIRECTION MODE selector is released ⇄.	Press the selector and set to ⇄ (depressed).
Recording or playback cannot be made or there is a decrease in sound level.	Record/playback and erase heads are either dirty or magnetized.	Clean or demagnetize the heads.
	Improper connection	Make connections properly. (page 5)
	Improper setting of the amplifier controls	Set the amplifier controls to the appropriate positions.
Excessive wow or flutter or dropout	Head, capstan or pinch roller is dirty.	Clean in accordance with instructions shown on page 15
Incomplete erasure	Erase head is dirty.	Clean the erase head.
Increased noise or poor reproduction in high frequencies	Head is magnetized.	Demagnetize the head.
Unbalanced tone in high frequencies	Improper setting of the DOLBY NR switches.	When playing back, set the switch to the same position used in recording.
	The unit is placed near a television set.	Move the deck away from the television set.

Noise

Symptom	Cause	Remedy
Hum noise	The deck is stacked on or under the amplifier.	Separate the units.
Noise is recorded.	Recording was made near equipment such as a television set or a color monitor, and the interference has affected the recording on the tape and the Dolby NR system.	Move the unit away from the television set or color monitor.
Oscillation occurs when trying to record from microphones.	The microphone is too close to the speakers.	Move it away from the speakers or reduce the amplifier volume.

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